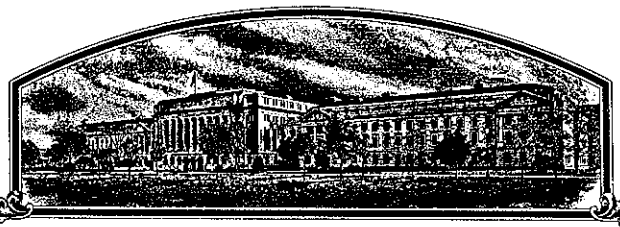
No. 8700139



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The Ohio State University Research Foundation

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'GR863'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D. C. *this* 31st *day of* March *in the year of our Lord one thousand nine hundred and* eighty-nine.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Clayton Yeutter
Secretary of Agriculture

APPROVAL EXPIRES 4-30-85

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426)

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S)
Ohio State University, Ohio Agricultural Research and Development Center

2. TEMPORARY DESIGNATION
OH256

3. VARIETY NAME
GR863

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
1680 Madison Ave.
Wooster, OH, 44691

5. PHONE *(Include area code)*
215-263-3700

FOR OFFICIAL USE ONLY

PVPO NUMBER
8700139

6. GENUS AND SPECIES NAME
Triticum aestivum L.

7. FAMILY NAME *(Botanical)*
Graminae

FILING
DATE May 21, 1987
TIME 9:45 ☑ A.M. ☐ P.M.

8. KIND NAME
Soft Red Winter Wheat

9. DATE OF DETERMINATION
9/6/85

FEES RECEIVED
AMOUNT FOR FILING
$ 1800.00
DATE May 21, 1987
AMOUNT FOR CERTIFICATE
$ 280.00
DATE Feb. 9, 1989

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Agricultural Experiment Station

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. H. N. Lafever
Agronomy Department
Ohio State University, Ohio Agricultural Research and Development Center
Wooster, OH, 44691
PHONE *(Include area code)* 216/263/3886

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A. Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B. Novelty Statement.
c. ☒ Exhibit C. Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. ☐ Exhibit D. Additional Description of Variety.
e. ☒ Exhibit E. Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)*
☒ Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ Foundation ☐ Registered ☒ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
U.S., September, 1986 (Sold as Foundation generation seed to producers of certified class seed)
☒ Yes *(If "Yes," give names of countries and dates)*
☐ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT
Howard N. Lafever (Breeder)
DATE 3/30/87

SIGNATURE OF APPLICANT
Kenneth W Sloan (Executive Director, The Ohio State University Research Foundation)
DATE 5/18/87

FORM WA-470 (7-84) (Edition of 3-84 is obsolete.)

Exhibit A

Origin and Breeding History of the Variety

1. GR 863 (previously designated OH 256) originated at the Ohio State University, Ohio Agricultural Research and Development Center from the cross: Xelaju 66/Logan//Abe. The final cross was made in 1973 and designated 7373. GR 863 was first selected in 1976 as an F_3 plant and designated 7373ABC-18. It was reselected in F_7 in 1980 as described below.

2. Breeder seed of GR 863 consists of the progeny of 16 F_7 plants selected for uniformity in 1980-1984 and bulked after 1984 harvest to constitute breeder seed. Breeder seed was seeded in fall, 1984. Foundation generation seed was produced in the 1985-86 crop season with the first distribution of Foundation generation seed made in the fall, 1986 to producers of the Certified class of seed. (Only 2 generations allowed beyond Breeder seed.)

3. GR 863 appears to be relatively uniform and homozygous as observed in the field over the past seven seasons. This would be expected of the progeny of phenotypically identical plants selected in the F_7 and reselected for uniformity in the F_8 through the F_{11} generations. (Originally 80 F_7 plants were selected as being identical, however, continued observation for uniformity in the F_8 through F_{11} generations resulted in the progeny of only 16 of the original 80 plants being bulked after harvest of the F_{11} generation in 1984).

4. GR 855 appears to be stable and true breeding as evidenced by agronomic and pathological examination of the F_7 through the F_{11} generations in special purification and increase nurseries.

5. Variants observed during the development of the variety were relatively few in number and of various types. In the 1984 increase some sterility was observed in this line and the 1985 Breeder seed production field variants verified this sterility and that outcrossing occurred with an adjacent tall, awnless, variety in the same fields as off-types consisted of intermediate awn types, and intermediate plant types. Roguing of the 1985 Breeder seed field and the 1986 Foundation generation field was done six and four times, respectively, resulting in less than .5% off types still present in the Foundation generation class. These off types consist of talls, awnless, awnleted, white chaff types (alone or in combination).

6. The variety was selected primarily for high yielding ability, extreme straw strength, and good disease resistance. Additionally, selection for other important agronomic, and quality traits was exercised. The variety was selected in comparison to popular varieties in Ohio, namely, Adena, Becker, Hart, Titan, and Tyler.

8700139

Exhibit B (Revised)

Novelty Statement and Botanical Description of the Variety

GR 863 is an awned, brown chaffed cultivar with purple ligules and auricles readily observable prior to ripening. To the best of my knowledge, these traits alone make it unique among soft red winter wheat cultivars. The cultivar is quite early and very short. It also has exhibited excellent straw strength in Ohio and region-wide tests. Winterhardiness of GR 863 is very good, but is exceeded slightly by Adena, Tyler, Cardinal, Hart and GR 855 in Ohio tests.

Test weight of GR 863 is medium, averaging 1.4 lb/bu below that of Hart and only .3 lb/bu below Titan. The yield record of GR 863 is excellent, being exceeded only by Becker and Cardinal in 25 Ohio trials conducted over a five year period.

The USDA Soft Wheat Quality Laboratory, Wooster, Ohio, in evaluations of samples of GR 863 over three years has found it to possess moderately good quality as a soft red winter wheat.

GR 863 possesses good field resistance to leaf rust (Puccinia recondita), and is very resistant to powdery mildew (Erysiphe graminis). It is also very resistant to wheat spindle streak mosaic virus (WSSM). GR 863 also possesses resistance to races GP, A, C, and F races of Hessian fly (Mayetoila destructor, Say) imparted by the H_3 gene.

GR 863 most closely resembles the cultivar Titan in the seed, seedling, and vegetative stages up until heading. Seed size, shape, and characteristics of these two varieties are quite similar. Coleoptile color of Titan is usually white while that of GR 863 is purple, however, under certain conditions the two varieties are indistinguishable in this regard. Seedling anthocyanin is absent in both cultivars and both exhibit dark green foliage in the juvenile and jointing stages of growth. Both cultivars exhibit purple auricles; GR 863 under most growth conditions and Titan under some growth conditions. However, GR 863 at heading is fully awned while Titan is only apically awnletted and at maturity Titan is white chaffed while GR 863 possessed brown chaff. In addition, GR 863 averages 6 days earlier in heading and 4 inches shorter in mature plant height (See attached Table 3, entitled "Comparative performance of OH 256 and currently grown varieties in drill plot trials, Ohio, 1981-85").

8700139

Table 1. Comparative yields of OH 256 and currently grown varieties in drilled plot trials by years, Ohio.

Line or Variety	1981 3 tests	1982 3 tests	1983 7 tests	1984 6 tests	1985 6 tests	Avg. 22 tests	Avg. 25 tests
Adena	55.9	63.1	58.1	57.7	76.4	63.7	62.7
Becker	57.3	66.3	63.5	56.5	83.3	67.4	66.2
Cardinal	60.6	64.9	64.3	63.5	84.0	69.5	68.5
GR855	54.9	66.7	61.9	56.5	77.4	65.3	64.1
Hart	56.4	68.9	57.7	55.3	78.3[1]	64.2	63.3
Titan	58.0	62.3	60.1	51.3	77.9	62.9	62.3
Tyler	-	70.2	64.2	57.5	75.3	66.2	-
OH 256	54.1	68.0	60.3	58.0	85.2	67.5	65.9
OH 260	-	56.8	57.6	42.2	75.7	58.2	-
Arthur	48.3	61.8	-	-	-	-	-
Caldwell	58.6	60.9	-	-	-	-	-

[1] No 1985 data. Adjusted avg.'s based on relative performance in remaining years.

Table 2. Comparative yields of OH 256 and currently grown varieties in drilled plot trials by locations, Ohio.

Line or Variety	OARDC 1982-85	N.W. Br. 1982-85	W. Br. 1982-85	Mah. Co. 1983-85	S. Br. 1983-85	O.F.S. 1983	Vg. Cr. Br. 1983-85	Avg. (22 tests)
Adena	64.3	80.6	48.9	50.4	55.8	51.9	85.0	63.7
Becker	70.6	79.6	51.1	59.6	60.3	50.1	89.2	67.4
Cardinal	71.8	86.2	51.0	58.1	62.5	53.9	92.8	69.6
GR855	71.8	79.7	43.2	57.1	56.2	48.2	90.0	65.3
Hart[1]	66.0	77.7	47.7	56.3	55.7	52.6	85.9	64.2
Titan	64.4	71.4	45.8	59.0	58.6	51.4	84.3	62.9
Tyler	72.3	81.5	47.8	53.7	54.0	57.6	89.8	66.2
OH 256	68.9	82.1	49.8	59.8	58.9	50.3	92.0	67.5
OH 260	63.4	63.3	42.2	53.0	48.9	46.9	84.3	58.2

[1] No 1985 data. Adjusted avg.'s based on relative performance in remaining years.

Table 3. Comparative peformance of OH 256 and currently grown varieties in drill plot trials, Ohio, 1981-1985. (Average of 22 tests)

Line or Variety	Winter Survival (%)	Pl. Height (in.)	Date Headed (May)	Lodging (%)	Test Wt. (lb/bu)
Adena	97	32	25.2	6	58.2
Becker	95	31	26.5	1	56.9
Cardinal	97	36	26.9	2	58.4
GR 855	96	31	24.1	1	55.6
Hart[1]	96	37	25.1	2	58.9
Titan	92	37	29.1	11	57.8
Tyler	97	38	26.0	6	57.9
OH 256	95	32	23.0	0	57.5
OH 260	90	31	20.9	0	58.5

[1] No 1985 data. Adjusted avg.'s based on relative performance in remaining years.

Table 4. Comparative insect, disease, aluminum tolerance, and quality ratings of OH 256 and currently grown varieties in miscellaneous Ohio tests.

Line or Variety	H.F. Res.	% Mildew 8 tests-5 yrs.	WSSM[2] 5 tests-4 yrs.	Leaf Rust 6 tests-3 yrs.	Al. tolerance: Yield ratio (% of Seneca) 3 yrs.	Al. tolerance: Visual score[3] 5 yrs.	Quality (3 yrs.): Milling	Quality (3 yrs.): Baking
Adena	G.P.	37	1	19 MR-MS	74	5	A+	A
Becker	A,C	73	1	5 MR	58	4	B	A-
Cardinal	A,C	39	1	0 VR	98	4	A+	B+
GR 855	A,C	1	1	43 MS	82	5	C	B
Hart[1]	A,C	77	1	53 MS-S	40	7	C	D
Titan	A,C,	37	2	17 MR	71	4	C	D
Tyler	None	0	1	56 MS-S	--	4	A	D
OH 256	A,C	2	2	10 R-MR	66	5	B	C
OH 260	A,C	0	2	0 VR	47	8	A+	A+

[1] No 1985 data. Adjusted avg.'s based on relative performance in remaining years.
[2] 0 = none to 9 = severe.
[3] 0 = very tolerant to 9 = very sensitive.

Table 5. Results of state-wide drilled plot yield trials including Ohio advanced wheat lines, 1986. (In order by average yield in 6 tests.)

Entry	Yield (bu/a) OARDC (Wooster)	N.Western Br. (Custar)	Western Br.(S. Cha'ston)	Mahoning Co. Farm (Canfield)	Veg.Crops Br. (Fremont)	Southern Br. (Ripley)	Avg. Yield 6 Tests	Survival (%)	Avg. Date Headed (May)	Avg. Pl.Ht. (in.)	Avg. Lodg. %	Leaf Rust2	Avg. Test Wt. (lb/bu)
OH 257	59.6	78.0	61.2	55.8	67.6	43.4	60.9	96	21	35	6	1VR	56.5
OH 328	55.1	72.3	66.9	51.5	80.8	35.0	60.3	97	19	34	18	5MS	56.0
Tyler	58.5	67.5	57.6	56.0	72.0	32.9	57.4	93	19	37	13	20S	55.1
Becker	53.4	66.0	70.7	38.1	76.8	37.6	57.1	95	19	31	5	5MR	54.0
OH 285	54.4	68.3	65.4	47.2	62.4	42.9	56.8	94	18	36	5	1VR	56.3
OH 265	57.0	73.3	72.6	41.4	61.0	33.7	56.5	95	18	34	10	0VR	55.1
Cardinal	53.6	70.9	63.9	43.5	61.0	39.9	55.5	92	19	36	7	1R	55.9
Hart	48.3	66.3	62.6	43.0	65.1	43.8	54.9	95	17	34	7	40S	55.7
Titan	52.0	62.8	66.3	48.9	70.3	26.9	54.5	95	22	38	22	3MS	55.3
GR 860	51.4	63.9	60.4	38.8	64.4	46.4	54.2	94	14	31	2	0VR	56.6
Caldwell	51.0	69.4	64.9	41.0	63.6	34.4	54.1	95	15	34	18	0VR	54.2
OH 286	49.7	64.1	72.2	39.7	58.8	33.6	53.0	95	19	33	4	1VR	51.8
OH 2621	47.6	66.2	71.6	38.2	56.4	28.5	51.4	96	17	32	4	0VR	52.4
OH 2941	47.7	63.0	69.2	37.9	55.9	30.4	50.7	96	17	33	6	1VR	53.1
GR 863	48.9	69.8	58.4	38.1	54.0	33.2	50.4	94	15	29	2	1R	54.1
OH 3081	53.9	63.5	58.1	39.2	56.7	30.9	50.4	92	15	32	2	20MS	54.2
5% L.S.D.	3.0	7.3	7.5	5.3	10.5	3.6							

1 Denotes lines dropped from breeding program following 1986 season.
2 % - class (OARDC, Wooster, only).

FORM APPROVED: OMB NO. 0581-0055

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
BELTSVILLE, MARYLAND 20785

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY

WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S): Ohio State University, Ohio Agricultural Research and Development Center

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
1680 Madison Ave.
Wooster, OH, 44691

FOR OFFICIAL USE ONLY

PVPO NUMBER: 8700139

VARIETY NAME OR TEMPORARY DESIGNATION: GR863

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:

[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____

[1] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____

[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

[2][2][4] FIRST FLOWERING

[2][2][9] LAST FLOWERING

4. MATURITY (*50% Flowering*):

[0][0] NO. OF DAYS *EARLIER* THAN .....

[ ][ ] NO. OF DAYS *LATER* THAN .....

[1] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (*From soil level to top of head*):

[0][8][1] CM. HIGH

[ ][ ] CM. TALLER THAN .....

[1][0] CM. SHORTER THAN .....

[1] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (*See reverse*):

[3] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Waxy bloom: 1 = ABSENT 2 = PRESENT

[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[ ][ ] 3 or 4 (some of each) NO. OF NODES (*Originating from node above ground*)

[1][6] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

[2] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____

[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[1][1] MM. LEAF WIDTH (*First leaf below flag leaf*)

[1][8] CM. LEAF LENGTH (*First leaf below flag leaf*):

8700139

11. HEAD:

[2] Density: 1 = LAX 2 = DENSE

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER *(Specify)* _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[5] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER *(Specify)*: _____

[8.5] CM. LENGTH [10] MM. WIDTH

12. GLUMES AT MATURITY:

[3] Length: 1 = SHORT *(CA. 7 mm.)* 2 = MEDIUM *(CA. 8 mm.)* 3 = LONG *(CA. 9 mm.)*

[2] Width: 1 = NARROW *(CA. 3 mm.)* 2 = MEDIUM *(CA. 3.5 mm.)* 3 = WIDE *(CA. 4 mm.)*

[2-4] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[3] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT (Trace?)

15. JUVENILE PLANT GROWTH HABIT:

[1] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[1-2] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[4] Phenol reaction *(See instructions)*: 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER *(Specify)* _____

[7.0] MM. LENGTH [3.5] MM. WIDTH [38] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] STEM RUST *(Races)* _____ [2] LEAF RUST *(Races)* (field) [0] STRIPE RUST *(Races)* _____ [0] LOOSE SMUT

[2] POWDERY MILDEW [0] BUNT [2] OTHER *(Specify)* WSSM virus

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY [0] APHID *(Bydv.)* [0] GREEN BUG [0] CEREAL LEAF BEETLE

[ ] OTHER *(Specify)* _____ HESSIAN FLY RACES: [2] GP [2] A [1] B [2] C [1] D [1] E [2] F [1] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Arthur	Seed size	Titan
Leaf size	GR855	Seed shape	Titan
Leaf color	Titan	Coleoptile elongation	Adena
Leaf carriage	Becker	Seedling pigmentation	Titan

RECEIVED USDA AMS MAY 21 1987 Plant Variety Protection Office

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. *(See attachment.)*

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

Exhibit D

Additional Description of the Variety

Coleoptile color is reported as purple (Exhibit C, item 13), however, purpling is not intense nor does it involve the entire coleoptile.

Seedling anthocyanin is reported as absent (Exhibit C, item 14), however, traces of purpling are occasionally observed on seedling plants.

Quality Evaluation of GR 863

(Data taken from U.S.D.A. Soft Wheat Quality Laboratory Reports)

Soft wheat quality tests of composite samples of 13 lines and varieties grown at 6 locations in Ohio in 1985 revealed GR 863 (OH 256) received a combined quality score of 78.2. Comparative scores for Adena, Becker, Titan and Tyler were 88.9, 110, 81.7, and 82.1, respectively.

In evaluations of composite samples of 14 lines and varieties grown at 6 locations in Ohio in 1984, GR 863 (OH 256) received a combined quality score of 78.4. Comparative scores for Adena, Becker (OH 234), Hart, Tyler, and Titan were 100, 85, 78.3, 70.5, and 60.9, respectively.

In evaluations of composite samples of 16 lines and varieties grown at 7 locations in Ohio in 1983, GR 863 (OH 256) received a combined quality score of 90.5 while Adena, Becker (OH 234), Hart, Titan, and Tyler received combined scores of 100, 92, 89.7, 85.7, and 79.9, respectively.

No quality test data is available for 1986 samples.

These and other tests show that the milling and baking quality of GR 863 is moderately good as a soft red winter wheat.

(See attached Tables 1-3)

Table 1. Wheat, milling, and flour analytical and baking data, and quality scores. Drill plot entries from Wooster, Ohio, 1985 crop.

ADVANCED NURSERY EVALUATION

FOR SOFT WHEAT MILLING AND BAKING QUALITY

WOOSTER, OHIO

STANDARD = 85789, BECKER

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMB. QUALITY SCORE	MICRO TEST WT KG/HL	SOFTNESS EQUIV.	FLOUR YIELD	ASH	FLOUR PROTEIN	MICRO AWRC	COOKIE DIAMETER	TOP GRAIN
****	STANDARD	100 A	100 A	100 A	77.3	66.8	76.2	.38	6.8	52.4	17.7	7
****	BENCHMARK	88.7 D	95.1 B	88.7 D	78.6	61.4*	73.5*	.35	7.9 *	52.9	18.2	7
788	ADENA	104 A	88.9 D	88.9 D	79	63.6	77.3	.35	7.7 *	52.7	17.5	3*
789	BECKER	100 A	100 A	100 A	77.4	66.8	76.2	.38	6.8	52.4	17.7	7
790	CARDINAL	104.4 A	101.9 A	101.9 A	80.1	62.2*	78.2	.33	7.3	51.6	18.0	6
791	TITAN	100 A	81.7 E	81.7 E	78.9	65.7	75.9	.33	7.6 *	53.8	17.2*	6
792	TYLER	102.1 A	82.1 E	82.1 E	79.3	64	76.7	.33	7.3	52.9	17.1*	4*
793	OH 256	96.8 B	78.2 F	78.2 F	79.5	63.4	75.3*	.3	8.4 *	54.5*	17.4*	5
794	OH 257	101.8 A	71.5 F	71.5 F	80.5	61.2*	77	.32	8.4 *	55.8*	17.3*	6
795	OH 260	104.9 A	88.4 D	88.4 D	81.3	63 *	78	.34	8.8 *	52.1	17.6	5
796	OH 262	99.5 B	96.3 B	96.3 B	79.7	68.2	75.3*	.34	7.7 *	54 *	17.9	6
797	OH 265	102.2 A	86.5 D	86.5 D	81	63.8	76.7	.33	8.1 *	54.4*	17.7	7
798	OH 285	104.3 A	92.9 C	92.9 C	80.5	61.9*	78.4	.33	8.5 *	52.2	17.8	7
799	OH 286	102.6 A	93.2 C	93.2 C	79.1	69	76.1	.34	7.7 *	53.6	17.7	7
800	OH 308	96 B	84.8 E	84.8 E	80.6	64.8	75.4	.4	7.7 *	53.8	17.4*	5

LAB NO.	ENTRY	BREAK FLOUR YIELD	EXT.	E.S.I.
****	STANDARD	40.4	76.1	8.2
****	BENCHMARK	35.8*	75.6*	11.7*
788	ADENA	37.7	79.1	6.8
789	BECKER	40.4	78.1	8.2
790	CARDINAL	36.5*	79.9	5.7
791	TITAN	39.5	77.8	8.6
792	TYLER	38	78.5	7.6
793	OH 256	37.5	77.3*	9.4 *
794	OH 257	35.7*	78.8	7.2
795	OH 260	37.2*	79.7	5.9
796	OH 262	41.6	77.3*	9.4 *
797	OH 265	37.9	78.5	7.6
798	OH 285	36.3*	80.1	5.4
799	OH 286	42.3	78	8.4
800	OH 308	38.7	77.3	9.2

Table 2. Wheat, milling, and flour analytical and baking data, and quality scores. Drill plot entries from Wooster, Ohio, 1984 crop.

WHEAT AND MILLING DATA

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	TEST WT.	BREAK FLOUR YIELD	ST.GR. FLOUR YIELD	RED. PASSES	FRIABILITY	E.S.I.	MILLABILITY
***	STANDARD	100 A	100 A	100 A	62.7	29.8	76.4	7	28.4	11.1	106.9
***	BENCHMARK	105.9A	109.A	105.A	61.6*	35.6	76.3	7	28 *	10.4	114.1
057	ADENA	100 A	100 A	100 A	62.7	29.8	76.4	7	28.4	11.1	106.9
058	HART	92.8 C	78.3F	78.3F	62.6	32	74.4Q	7	27 Q	12.9*	93.4 *
059	TYLER	100 A	70.5F	70.5F	62.2	32.4	76.2	7	28.5	11.4	105.7
060	TITAN	93.6 C	60.9F	60.9F	62.7	33.6	74.8*	7	26.8Q	12.5*	93.6 *
061	OH 234	94.5 C	85 D	85 D	62.3	34	75.9	7	27.7Q	11.5	95.3 *
062	OH 235	95 B	98.2B	95 B	61.6*	30.5	76.1	7	28.2	10.8	99.1
063	OH244	106.5A	103.A	103.A	63.1	30.6	77.6	7	29.2	9.6	116.9
064	OH 256	93.4 C	78.4F	78.4F	62.2	32	75.4*	7	27.3Q	12	94.8 *
065	OH 257	97.2 B	69.9F	69.9F	63.1	26.8Q	75.9	7	27.7Q	11.6	103.8
066	OH 260	109.7A	93.6C	93.6C	64.8	31.9	77.9	7	29.3	9.5	120.2
067	OH 262	98.1 B	95.1B	95.1B	61.7*	30	75.6	7	28.6	11.8	99.3
068	OH 265	100.8A	89.5D	89.5D	63.1	35.8	76.3	7	29	11.4	103.8
069	OH 285	107.2A	113.A	107.A	63.4	29	77.5	7	29.8	9.3	118.9
070	OH 286	101.2A	97.2B	97.2B	61.8*	37.2	76.6	7	29.3	11	104.9

STRAIGHT-GRADE FLOUR

LAB NO.	FLOUR PROTEIN %	ASH %	MICRO AWRC %	COOKIE DIAMETER CM.	TOP GRAIN
***	9.74	.39	48.4	17.89	4
***	8.9	.35	51.3*	18.35	7
057	9.74	.39	48.4	17.89	4
058	10.9Q	.38	50.3*	17.56*	1*
059	9.01	.39	52.6Q	17.39Q	2*
060	10	.39	51.6Q	17.16Q	1*
061	9.18	.43*	49.7	17.57*	3
062	10.2	.43*	48.3	17.87	4
063	9.4	.39	47.9	17.91	4
064	10.2	.41	50.7*	17.64*	2*
065	10.4*	.38	50.4*	17.33Q	3
066	11.2Q	.38	48.2	17.82	3
067	9.38	.41	51 *	17.91	5
068	9.9	.41	51 *	17.81	3
069	10.1	.39	46.9	18.15	5
070	9.93	.42*	49.9	17.93	3

12

87001139

Table 3. Wheat, milling, and flour analytical and baking data, and quality scores. Drill plot entries from Wooster, Ohio, 1983 crop.

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MILLAB. SCORE	TEST WT. KG/HL.	WHEAT PROT. %	WHEAT ASH %	PSI %	ESI %	RED PASS	BREAK FLOUR YIELD	FLOUR YIELD	FRIAB %
107 10	OH260	103.8A	100.3A	100.3A	117.8	78.9	10.4*	1.6	38.6	9.1	8	31.9*	76.8	28.1
***	STANDARD	100 A	100 A	100 A	103.7	77	9.6	1.53	40.2	11.7	8	33.9	75.4	27.1
096 3	ADENA	100 A	100 A	100 A	103.7	77	9.6	1.53	40.2	11.7	8	33.9	75.4	27.1
110 13	OH285	105 A	98.3 B	98.3 B	119.1	78.3	9.8	1.62	37.4*	9	8	30.7*	76.6	28.1
103 2	OH244	107.6A	97.3 B	97.3 B	117.8	77.5	9.3	1.53	38.7	9.1	8	34.1	77	28.5
***	BENCHMARK	104.8A	96.2 B	96.2 B	112.5	79.3	9.6	1.45	39.2	10.4	8	35	76.6	27.6
109 12	OH265	94.5 C	94.2 C	94.2 C	90.5 *	77.3	9.2	1.69	44.1	12.1	8	38.3	74.5*	26.3
111 15	OH286	92.5 C	93 C	92.5 C	87.9 *	76.3	9.3	1.69	45.2	12.3	8	39	74.4*	26.3
101 4	OH234	92 C	92.4 C	92 C	87.1 *	76.3	9.1	1.67	46	12.4	9	38.4	74.5*	25.3
105 8	OH256	90.5 C	93 C	90.5 C	91 *	76.9	10	1.67	39.4	12.1	8	34.2	73.60	25.7
102 6	OH235	93.2 C	89.8 D	89.8 D	95.7	76.5	9.7	1.64	38.2*	11.6	8	33.7	74.9	26.6
097 11	HART	89.7 D	90.5 C	89.7 D	91.4 *	76.2*	10.3*	1.65	40	12.7	8	34.6	73.50	25.9
100 1	OH220	94.3 C	88.2 D	88.2 D	96.4	77.3	10.3*	1.64	46.9	11.8	9	35.4	75.4	26.4
108 16	OH262	87.1 D	96.9 B	87.1 D	80.2 Q	75.7*	9.5	1.65	44.7	13.6*	9	39.3	73.8*	25.4
098 5	TITAN	91.8 C	85.7 D	85.7 D	98.6 *	76.7	9.6	1.65	39.7	12.9*	8	36.6	73.9*	25.9
099 14	TYLER	102.7A	79.9 F	79.9 F	108.2	77	9	1.5	39.1	11.6	8	34.8	75.6	27.8
104 7	OH255	78.8 F	87.1 D	78.8 F	79.1 Q	78.2	10.80	1.71*	36.40	13.6*	9	31.7*	72.70	24
106 9	OH257	86.8 D	74 F	74 F	96.9	78.3	10.80	1.74*	33.50	12	8	29.80	75.2	26.4

STRAIGHT-GRADE FLOUR

LAB NO.	PROT. %	ASH %	ADJ.** MACH. VISC.	MICRO AWRC %	COOKIE DIAM. CM.	TOP GRAIN
107	9.1	.36	67	47.7	18.67	7
***	7.8	.36	91	48.8	18.31	7
096	7.8	.36	91	48.8	18.31	7
110	8.5	.35	55	49.1	18.7	7
103	7.8	.37	10	48.5	18.21	6
***	8.5	.36	85	50.6*	18.57	3*
109	7.7	.4 0	97	51.5*	18.25	6
111	7.8	.410	11	51.4*	18.17	6
101	7.4	.4 0	82	51.5*	18.12	6
105	8.6	.37	97	50.1	18.32	6
102	8.1	.39*	59	49.4	18.06*	7
097	8.6	.36	78	50.7*	18.22	6
100	9	.39*	91	52.30	18.26	5
108	7.8	.410	10	50.6*	18.25	6
098	8.4	.37	84	51.3*	18.08	6
099	7.6	.35	13	50.8*	17.690	5
104	9.3	.37	73	49.6	18.22	6
106	9	.38*	70	50.4*	17.85*	6

13

87001139

Exhibit E

Statement of the Basis of Applicant's Ownership

The originating three-way cross, early line evaluation, selection, reselection, purification, testing, and final multiplication were all performed by the applicant breeder (Dr. H. N. Lafever) or his technical assistants on the property of The Ohio State University, Ohio Agricultural Research and Development Center utilizing funds provided for such research. Ownership of the variety shall remain with The Ohio State University, Ohio Agricultural Research and Development Center, however, through The Ohio State University Research Foundation, exclusive rights to produce, promote, and market this variety have been granted, by contract, to the Agricultural Genetic Research Association.